REMARKS

Claims 1, 3-10, 14, 16-32, 34-37, and 40-46 remain in this application with claim 1 and 32 in independent form. Claims 1, 22, and 32 have been amended and claims 2, 11-13, 15, 21, 33, 38-39, 41, and 45-46 have been cancelled.

Applicant submits herewith a petition for a one month extension of time and the associated fee to extend the period of reply to December 24, 2006. Applicant appreciates the telephonic interviewed conducted on December 5, 2006 with the Examiner to review the outstanding Office Action.

The Examiner objected to the specification filed June 9, 2006 under 35 U.S.C. §132(a) because the Examiner contends that the amendment introduced new matter into the disclosure, specifically paragraph [0029]. Applicant has amended paragraph [0029] and the objection is now moot.

Claims 45 and 46 stand rejected under 35 U.S.C. §112, first paragraph as failing to comply with the written description requirement. Specifically, the Examiner contends that claims 45 and 46 introduce new matter as result of claiming that the chain extender has a hydroxyl number of from about 448 to about 4488 mg KOH/g. Applicant has cancelled claims 45-46 and the §112 rejection is now moot.

Claims 1, 3-10, 14, 16-32, 34-37, and 40-46 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner contends that amendments to claims setting forth ranges of functionality values for the isocyanate-reactive component lack support.

Referring to claim 1, the first isocyanate-reactive component had previously been amended to recite "at least two isocyanate-reactive groups" and has been cancelled. The

second isocyanate-reactive component had previously been amended to recite "at least three isocyanate-reactive groups". Support for the limitation can be found in Claim 2 and paragraph [0022] of the specification as originally filed. As such, the §112 rejection is overcome.

Claims 1, 3-10, 14, 16-32, 34-37, and 40-46 stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner contends that the lower range endpoint of "7" for the range of chain extender content lack support in the originally filed disclosure.

Even though Applicant believes there is adequate support for such a lower range endpoint, claims 1 and 32 have been amended. Applicant respectfully submits that support for such an endpoint can be based upon the specification as whole. In the specification, the range of the amount of chain extender is described in paragraph [0029] as from 5 to 50 parts by weight based on 100 parts by weight of the composition and preferably from 5 to 30 parts by weight based on 100 parts by weight of the composition, and more preferably 5 to 15. Further, each of examples included more than 5 parts by weight of the chain extender.

Various case law has determined that disclosure of a range necessary includes all the points in between. In *In re Wertheim*, 541 F.2d at 263, 191 U.S.P.Q. at 97, the CCPA made it clear that "[b]roadly articulated rules are particularly inappropriate" in applying the description requirement to narrowed claims involving ranges. Further, in *In re Wands*, 858 F.2d 731, 737, 8 U.S.P.Q.2d 1400, 1404 (Fed. Cir. 1988), the CAFC articulated eight factors by which an examiner can assess whether a disclosure is sufficient to enable one of ordinary skill in the art to practice a claimed invention

throughout its scope without having to engage in undue experimentation: (1) the quantity of experimentation necessary; (2) the amount of direction or guidance presented; (3) the presence or absence of working examples; (4) the nature of the invention; (5) the state of the prior art; (6) the relative skill of those in the art; (7) the predictability or unpredictability of the art; and (8) the breadth of the claims. *In re Wands*, 858 F.2d 731, 737, 8 U.S.P.Q.2d 1400, 1404 (Fed. Cir. 1988)(citing *Ex parte Forman*, 230 U.S.P.Q. 546, 547 (Bd. Pat. App. & Int. 1986)). In other words, the *Wands* factors consider that a determination whether claims are enabled is made in the context of the entire specification.

In the present case, when a determination is made in the context of the entire specification, claiming the chain extender present in an amount of from 7 parts by weight to 30 parts by weight based on 100 parts by weight of the composition is enabled and thus supported by the specification as originally filed. It is submitted that little, if any, experimentation is necessary to arrive at such an endpoint and the examples each include more than 5 parts by weight. However, in view of the current amendments, the §112 rejection is moot.

Claims 1, 3-10, 14, 16-32, 34-37, and 40-46 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bleys (United States Patent No. 5,968,993) and as being unpatentable over Lutter et al. (United States Patent No. 5,420,170).

Claims 1 and 32 have been amended to more clearly define the subject invention. Specifically, the isocyanate component has been amended to require 1) ***substantially free of toluene diisocyanate*** and 2) ***comprising pure diphenylmethane diisocyanate*** in an amount of from 50 to 99 parts by weight based on 100 parts by weight of the isocyanate

component and ***polymeric diphenylmethane diisocyanate*** in an amount from 1 to 50 parts by weight based on 100 parts by weight of the isocyanate component. Further, the polyurethane viscoelastic foam has been further defined as having a density of greater than two and a half pounds per cubic foot and ***being substantially free of flame retardant and passes a California Technical Bulletin 117-Flammability test as a result of the isocyanate component and the isocyanate-reactive blend***.

As discussed with Examiner and as discussed at length in the Background of the Invention section of specification as originally filed, no compositions were known that produce viscoelastic polyurethane foams that are able to pass the Cal. Tech. Bulletin 117-flammability test without including additional flame retardant. There are numerous disadvantages to including flame retardant, such as increasing the cost of manufacturing and increasing the disclosure requirements of the viscoelastic polyurethane foam. Therefore, the subject invention has overcome problems encountered in the prior art by eliminating the need to incorporate substantial amounts of flame retardant, if at all. The unique and novel combination of the isocyanate components and isocyanate-reactive component, when formulated as claimed, provides the viscoelastic polyurethane foam with adequate viscoelastic properties while still able to pass the Cal. Tech. Bulletin 117-flammability test.

The Court of Appeals for the Federal Circuit (CAFC) recently reiterated the requirements required for making an obviousness determination in *In re Kahn*, 441 F.3d 977 (Fed. Cir. 2006). The CAFC stated that most inventions arise from a combination of old elements and each element may often be found in the prior art; however, mere

identification in the prior art of each element is ***insufficient*** to defeat the patentability of the combined subject matter as a whole.

The CAFC also stated that to establish a *prima facie* case of obviousness based on a combination of elements disclosed in the prior art, a basis must be articulated. This requires the Examiner to explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious. The "motivation-suggestion-teaching" requirement protects against ***the entry of hindsight*** into the obviousness analysis, a problem which §103 was meant to confront.

In *Alza Corp. v. Mylan Laboratories Inc.,*80 USPQ2d 1001 (Fed. Cir. 2006), the CAFC further stated that the basis includes (1) the scope and content of the prior art; (2) the level of ordinary skill in the prior art; (3) the differences between the claimed invention and the prior art; and (4) objective evidence of nonobviousness. The CAFC stated that legal determinations of obviousness should be based on evidence rather than on mere speculation or conjecture.

The CAFC continued "rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. This requirement is as much rooted in the Administrative Procedure Act [for our review of Board determinations], which ensures due process and non-arbitrary decision making, as it is in §103."

Referring to the §103 rejection based upon Bleys, the Examiner generally contends that Bleys discloses preparations of polyurethane foams prepared from

isocyanates, polyols, and chain extenders that have densities as claimed. Specifically, the Examiner cited Example 3 of Bleys that produces a microcellular elastomeric polyurethane foam having a density of 420 kg/m^3, or 26.2 pounds per cubic foot. Further, the Examiner contends that Bleys discloses preferred densities of less than 600 kg/m^3. The Examiner then contends it would have been obvious for one having ordinary skill in the art to vary the amounts of the blowing agents to arrive at Applicant's claims.

Applicant respectfully requests the Examiner to reconsider the Declaration submitted under 37 C.F.R. §1.132 and the claims as presently amended. It is requested that the Examiner reconsider the substance and depth of the Declaration and identify those portions that the Examiner contends are insufficient in order to allow the Applicant an opportunity to properly respond to the Examiner's rejection. Merely reciting the requirements for a Declaration, without more, does not permit the Applicant an opportunity to adequately document, on the record, more elaborate responses to the Examiner's rejection.

The Declaration addresses the impropriety of modifying Bleys when viewed as a whole and without using impermissible hindsight and the inoperability when modified as the Examiner suggests. Specifically, Bleys is directed toward microcellular elastomeric polyurethane foams, which does not exhibit viscoelastic properties. Bleys requires the microcellular elastomeric polyurethane foam to have a Shore A hardness of at least 85 (see col. 3, lines 23-29). Shore hardness is a measure of the resistance of material to indentation by a 3 spring-loaded indenter. The higher the number, the greater the resistance. Typically, Shore A hardness ranges from about 20 to about 95. Illustrative materials that fall within this range include printing rolls, door seals, solid truck tires,

abrasive-handling pads, and non-spark hammers. As made clear by the Declaration, viscoelastic polyurethane foams are flexible and, as such; do not have a Shore A hardness falling within this range, if at all. Since Bleys is directed toward microcellular elastomeric polyurethane foams having a Shore A hardness of at least 85, one of ordinary skill in the art would not look to Bleys when manufacturing viscoelastic polyurethane foams. Moreover, Bleys teaches away from forming viscoelastic polyurethane foams by requiring such a Shore A hardness.

Bleys only discloses a polyol blend having an average oxyethylene content of between 50 and 85 weight percent. The examples of Bleys disclose elastomers formed ***individually*** from a Polyol A, a Polyol B, and a Polyol C, i.e., no blends of Polyols A, B, or C. Polyol A is a polyether triol having random oxyethylene (EO) and oxypropylene (PO) residues with a 76% oxyethylene content and OH-value of 42 mg KOH/g. Polyol B is EO/PO triol having 10% EO-tip and OH-value of 36 mg KOH/g. Polyol C is a EO/PO diol having 75% random EO-groups and a molecular weight of 4000.

Accordingly, Bleys does not disclose, teach, or suggest, the unique and novel combination of isocyanate component and isocyanate-reactive blend and chain extender to arrive at the claimed invention. Bleys also does not disclose, teach, or suggest, the microcellular elastomeric polyurethane foams having a glass transition temperature of from 5 to 65 degrees Celsius and a tan delta peak of from 0.75 to 1.75 and there is no teaching or suggestion to modify Bleys as the Examiner suggests.

Therefore, the §103 rejection is overcome and claims 1 and 32 are believed to be allowable. Claims 3-10, 14, 16-21, and 23-31, which depend directly or indirectly from claim 1, are also believed to be allowable. Claims 34-37, 40, and 42-46 which depend

directly or indirectly from claim 32, are also believed to be allowable.

Referring to the §103 rejection based upon Lutter et al., the Examiner states that Lutter et al. discloses preparations of polyurethane foams prepared from isocyanates, polyols, and chain extenders having densities claimed. The Examiner also states that Lutter et al. recites variation of amounts of chain extenders that overlap with the claimed ranges. The Examiner contends that since the amount of chain extender may be varied for the purposes of controlling polymer build-up, it would have been obvious to vary the amount of chain extender to arrive at the claimed invention for the purpose of controlling polymer build-up.

Again, Applicant respectfully requests the Examiner to reconsider the Declaration submitted under 37 C.F.R. §1.132 and the claims as presently amended. The Declaration addresses the impropriety of modifying Lutter et al. and the inoperability of modifying Lutter et al. as the Examiner suggests. Lutter et al. is silent as to the glass transition temperature of the viscoelastic polyurethane foam formed therein.

As set forth in the previously submitted Declaration, those of ordinary skill in the art would anticipate that increasing the amount of the chain extender, as taught by Lutter et al., would ***further increase*** the glass transition temperature resulting in the foam becoming more rigid. Evidence of unobvious or unexpected advantageous properties, such as superiority in a property the claimed compound shares with the prior art, can rebut *prima facie* obviousness. "Evidence that a compound is unexpectedly superior in one of a spectrum of common properties . . . can be enough to rebut a *prima facie* case of obviousness." No set number of examples of superiority is required. *In re Chupp*, 816 F.2d 643, 646, 2 USPQ2d 1437, 1439 (Fed. Cir. 1987). Further, there is no disclosure,

teaching, or suggestion of adjusting the amount of the chain extender to have the glass transition temperature coincide with the use temperature of the foam.

In comparison with the second set of examples set forth in the Declaration, even when the subject invention has a higher amount of chain extender than the examples of Lutter et al., the viscoelastic polyurethane has a glass transition temperature lower than 52 °C. More specifically, Examples 13-19 are prepared in accordance with the claimed invention. Examples 16-18 have the chain extender present in the claimed amounts and exhibit glass transition temperature from 5 °C to 44 °C and a peak tan delta from 1.0 to 1.6. The foam prepared according to Lutter et al. has a higher glass transition temperature than the claimed ranges at a lower amount of chain extender. In other words, increasing the chain extender to the amounts claimed will continue to increase the glass transition temperature beyond the claimed range. Thus, the lower glass temperature with higher amounts of chain extender is an unexpected advantageous property.

There is no suggestion or motivation within Lutter et al. to employ the chain extender in the amount claimed to arrive at a foam according to the subject invention. Further, Lutter et al. does not disclose, teach, or suggest the unique and novel combination of isocyanate component and isocyanate-reactive blend and chain extender to arrive at the claimed invention. Accordingly, Lutter et al. does not disclose, teach, or suggest, each and every limitation present in claims 1 and 32 and there is no teaching or suggestion to modify Lutter et al. as the Examiner suggests. Therefore, the §103 rejection is overcome and claims 1 and 32 are believed to be allowable. Claims 3-10, 14, 16-21, and 23-31, which depend directly or indirectly from claim 1, are also believed to be allowable. Claims 34-37, 40, and 42-46 which depend directly or indirectly from claim

32, are also believed to be allowable.

It is respectfully submitted that the Application, as amended, is now presented in condition for allowance, which allowance is respectfully solicited. Applicant believes that no fees are due, however, if any become required, the Commissioner is hereby authorized to charge any additional fees or credit any overpayments to Deposit Account 08-2789.

Respectfully submitted

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